Claims

1. A device for optoelectronically detecting the movement and/or the position of an object (10) comprising at least one transmitting element (11) for emitting radiation in the optical wavelength range and at least one receiving element (12) for receiving at least a part of the radiation emitted by the transmitting element (11) and reflected back by the object (10) and also comprising an optical guide (13) arranged in the beam path between the transmitting element (11) and the receiving element (12),
characterized in that the optical guide (13) itself comprises light coupling means for coupling-in the radiation previously radiated through the optical guide (13) and diffusely scattered at the object (10).

2. A device in accordance with Claim 1, characterized in that the light coupling means (13a) couples into the optical guide (13) the light scattered by the object transversely to the longitudinal extent of the optical guide (13).

3. A device in accordance with Claim 1 or 2, characterized in that the radiation emitted through the optical guide (13) by the transmitting element (11) is radiated transversely through the optical guide (13) from the side (13b) opposite the object (10).

4. A device in accordance with any of the preceding Claims, characterized in that the radiation emitted along the optical guide (13) by the transmitting element (11) is at least partially coupled-out of the optical guide (13) by the light coupling means (13a) before it is scattered by the object (10).

5. A device in accordance with any of the preceding Claims, characterized in that the light coupling means (13a) are produced in the optical guide (13) by a forming process, preferably at the side (13b) of the optical guide (13)

facing away from the object (10) that preferably approaches the optical guide (13) transversely.

6. A device in accordance with any of the preceding Claims, characterized in that the optical guide (13) comprises a plurality of light coupling means (13a) which are each preferably spatially associated with a respective transmitting element (11).

7. A device in accordance with any of the preceding Claims, characterized in that the transmitting elements (11) are arranged in the form of a keyboard and in that a preferably curved or circular-segment-shaped light coupling means (13a) is associated with each key (14).

8. A device in accordance with any of the preceding Claims, characterized in that the light coupling means (13a) only partially penetrate into the optical guide (13), preferably by up to approximately 50 %.

9. A device in accordance with any of the preceding Claims, characterized in that a device is provided for compensating for extraneous light, said device comprising a clock pulse generator (20) for controlling the multiplexing of a plurality of transmitting elements (11) which emit radiation into a plurality of radiation measuring sections (x), and also a synchronous demodulator (21) which is controlled by the clock pulse generator (20) for associating the detected signal in the form of a measured value with the individual measuring sections (x), and in that, in dependence on the detected values, there is provided at least one compensating LED (15) which emits light for the purposes of compensating the extraneous light.

10. A device in accordance with Claim 9, characterized in that the compensating LED (15) is arranged at the edge of the optical guide (13).

11. A device in accordance with Claim 9 or 10, characterized in that the compensating LED is arranged at an inclined edge (13c) of the optical guide (13).

12. A device in accordance with any of the Claims 9 to 11, characterized in that the compensating LED (15) is formed by one of the transmitting elements (11)

13. A device in accordance with any of the preceding Claims, characterized in that the transmitting element (11) and/or the receiving element (12) are arranged at the edge, preferably at an inclined edge (13c) of the optical guide (13), spaced from the light coupling means (13a).

14. A device in accordance with any of the preceding Claims, characterized in that the light coupling means (13a) are arranged in the form of a matrix.

15. A device in accordance with any of the preceding Claims, characterized in that the light coupling means (13a) are arranged in the form of a circle.

16. A device in accordance with any of the preceding Claims, characterized in that the signals derived by the receiving element (12) are used as input for a writing recognition system.

17. A device in accordance with any of the preceding Claims, characterized in that the transmitting element (11) remains illuminated after the key (14) associated therewith is actuated.

18. A method for optoelectronically detecting the movement and/or the position of an object (10) using a device in accordance with any of the preceding Claims comprising the steps:
- emitting radiation in the optical wavelength range,
- emitting the light through an optical guide (13) up to the object (10),

- reflecting at least a part of the light from the object (10) and coupling the reflected light back into the optical guide (13),
- receiving the reflected light and forming an input signal,
- evaluating the input signal for determining the movement and/or position of the object (10),

characterized in that the diffusely backscattered light is coupled into the optical guide by a light coupling means (13a) of the optical guide (13) itself.

19. A method in accordance with Claim 18, characterized in that the light coupling means (13a) couples the light that was backscattered by the object (10) into the optical guide transversely relative to the longitudinal extent of the optical guide (13).

20. A method in accordance with Claim 18 or 19, characterized in that the radiation emitted through the optical guide (13) by the transmitting element (11) is radiated transversely through the optical guide (13) from the side (13b) opposite the object (10) before it is backscattered by the object.

21. A method in accordance with any of the Claims 18 to 20, characterized in that the radiation emitted along the optical guide (13) by the transmitting element (11) is at least partially coupled-out of the optical guide (13) by the coupling means (13a) before it is scattered by the object (10).

22. A method in accordance with any of the Claims 18 to 21, characterized in that a plurality of transmitting elements (11) operating in a multiplex mode radiate the light, and in that derived input signals are divided into the light components stemming from the plurality of transmitting elements (11), and in that, in dependence on the derived input signals, at least one compensating LED (15) is

controlled for the purposes of compensating extraneous light.

23. A method in accordance with any of the Claims 18 to 22, characterized in that one of the transmitting elements (11) is used as the compensating LED (15).

24. A method in accordance with any of the Claims 18 to 23, characterized in that the signals derived by the receiving element (12) are used as input for a writing recognition system.

25. A method in accordance with any of the Claims 18 to 24, characterized in that the transmitting element (11) remains illuminated after the key (14) associated therewith is actuated.